



# Department of Building

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Ronald L. Lynn, Director/Building Official • Gregory J. Franklin, Assistant Director

## SUBJECT: TG-10-2012 STRUCTURAL OBSERVATION

- 1.0 PURPOSE:** The purpose of this technical guideline is to specify the requirements for structural observation for projects built within the jurisdiction of Clark County.
- 2.0 SCOPE:** Structural observation shall be performed for those structures included in Seismic Design Category D, E, or F, as determined in 2009 IBC Section 1613, where one or more of the conditions outlined in 2009 IBC Section 1710.2 exist. Additionally, the Building Official is requiring structural observation on all buildings defined as resort hotels under Clark County Code Title 30, high rise buildings as defined in the Southern Nevada Amendments to the 2009 IBC, and atriums as defined in the 2009 IBC. Triggering requirements for structural observation are not based upon the Seismic Design Category.
- 3.0 ABBREVIATIONS & ACRONYMS:**
- BAC:** Building Administrative Code of Clark County  
**CCDB:** Clark County Department of Building  
**IBC:** International Building Code  
**TG:** Technical Guideline
- 4.0 DEFINITIONS:** For the purposes of this TG certain terms, phrases, words and their derivatives shall be construed as specified in this section and the BAC.

**Approved Construction Document:** Construction documents that have been reviewed and accepted for permit by the Building Official pursuant to the BAC.

**Atrium:** See 2009 IBC Section 202. An opening connecting two or more *stories* other than enclosed *stairways*, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. Stories, as used in this definition, do not include balconies within assembly groups or *mezzanines* that comply with Section 505.

**Engineer of Record:** The registered design professional in responsible charge of the structural design of the subject project.

**High Rise Building:** A building with an occupied floor located more than 55 feet above the lowest level of fire department vehicle access.

**APPROVED DATE: DRAFT**  
**EFFECTIVE DATE: DRAFT**

Written by:	Concurred by:	Approved by:
John S. Telford, P.E. Principal Engineer	Theodore L. Droessler, P.E. Manager of Engineering	Ronald L. Lynn, B.O. Director/Building Official

**Registered Design Professional:** An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

**Resort Facility:** See Title 30.08.030 Clark County Unified Development Code.

**Structural Observation:** The visual observation of the structural system encompassing the structure, foundation elements and soils within the influence zone of the foundation elements by a *registered design professional* for general conformance to the *approved construction documents*. Structural observation does not include or waive the responsibility for the inspection required by IBC, BAC, referenced standards, and approved TGs.

**Structural Observer:** The registered design professional in responsible charge of the structural observation services. The engineer performing the field structural observation shall be employed by the same firm as the structural observer and shall have a current civil or structural professional engineering license from the State of Nevada. The structural observer shall possess as a minimum the same level of licensure as required by NRS 625 for the Engineer of Record on the structure.

## 5.0 REFERENCES:

BAC, Clark County Building Administrative Code  
IBC, International Building Code  
SNA-IBC, Southern Nevada Amendments to the IBC  
Title 30 Clark County Unified Development Code, current adopted edition

## 6.0 RESPONSIBILITIES:

### 6.1 CCDB:

CCDB shall require structural observation as specified in the scope of this TG.

### 6.2 Owner:

The owner shall employ a structural observer to perform the structural observations in accordance with the approved structural observation plan. It is the owner's responsibility to coordinate with the contractor and the structural observer to ensure that the structural observer is able to perform the duties as required in the approved structural observation plan.

### 6.3 Engineer of Record:

The engineer of record (geotechnical and structural) shall submit a structural observation plan when requested by CCDB. The engineer of record is responsible for designating the structural observer, items to be inspected, and frequency.

### 6.4 Structural Observer:

The registered design professional hired by the owner shall perform the structural observations in accordance with the approved structural observation plan and shall submit reports as required in this TG.

## 7.0 PROCEDURE:

### 7.1 Prior to Permit Issuance:

7.1.1 CCDB shall notify the point of contact on the permit application and the engineer of record that structural observation is required in the initial plan review correction letter. This notification shall include a request to provide a structural observation plan which would outline the schedule of the required structural observations.

7.1.2 The engineer of record shall submit a written structural observation plan to CCDB for approval. This document is required to be sealed by the engineer of record.

The plan shall require structural observation to be performed at significant construction stages and at the completion of the structural system.

**Structural - Super Structure**

7.1.2.1 At a minimum, structural observation shall be performed for all lateral elements, prior to placement of concrete for the foundation system, for all atypical levels of construction, 20% of the remaining levels rounded up to the nearest level, at the completion of the structural system and as required by the engineer of record. Additional structural observations may be required by the Building Official depending upon the complexity of the project.

**Geotechnical - Foundation Elements**

7.1.2.2 At a minimum, structural observation shall be performed on the first five foundation elements, prior to placement of concrete for the foundation system, 20% of the remaining foundation elements, and as required by the engineer of record. Additional structural observations may be required by the Building Official depending upon the complexity of the project.

7.1.3 CCDB shall review, provide any required corrections, and approve the structural observation plan. Once approved by the CCDB the structural observation plan is considered an approved construction document. Any revisions to the approved structural observation plan shall be submitted to and approved by CCDB prior to execution.

7.1.4 The owner shall employ a registered design professional to perform the structural observations and notify CCDB in writing of the selected structural observer. The special inspection agency is not allowed to be the structural observer, for the foundation elements or super structure, unless they are the engineer of record for the project.

7.1.5 The selected structural observer shall review the construction documents and the structural observation plan. The structural observer shall submit a written statement to the Building Official prior to permit issuance. The structural observer's written statement shall state that the construction documents and the structural observation plan have been reviewed and contain an acknowledgement that all requirements are understood. The written statement shall also include the names and license number(s) of the structural observer and those that will perform the field structural observations.

**7.2 After Permit Issuance:**

7.2.1 CCDB shall enter the clearance requirement for the structural observation report into the required inspection screen for the building permit. A clearance is established as a hold point prior to a foundation inspection, for geotechnical, and framing inspection, for structural. An additional clearance is required for the final structural observation report. The final report clearance is placed prior to the building final inspection.

7.2.2 It is the contractor's responsibility to coordinate the Structural Observation visits in such a way that the person performing the structural observation is able to perform the duties outlined in the Structural Observation plan.

7.2.3 The structural observer shall perform the required structural observations in accordance with the approved structural observation plan.

7.2.3.1 No concrete shall be placed or any portion of the structural system covered

or loaded prior to the structural observation and resolution of any noted discrepancies.

- 7.2.3.2 The structural observer shall document each visit on a new Form 802.
- 7.2.4 The structural observer shall document their observations of conforming work on the Observations line. The structural observer shall clearly identify the area or item reported, by using gridlines and elevations.
- 7.2.5 If the structural observer identifies work that does not conform to the intent of the approved construction documents, they shall list each discrepancy on the Discrepancies Observed line. The discrepancies shall include a location and a detailed description of the deficient condition. The observer shall state why the item is a discrepancy.
  - 7.2.5.1 The structural observer shall notify the contractor, special inspector, CCDB, and the owner of any observed discrepancies.
  - 7.2.5.2 The owner shall coordinate with the contractor and ensure that areas with unresolved discrepancies are not covered or loaded until all discrepancies are resolved.
  - 7.2.5.3 CCDB shall issue the appropriate enforcement action and ensure that all discrepancies are resolved.
- 7.2.6 Resolve the discrepancy on the original structural observation report that indentified the discrepancy. State how the condition has been resolved and that the work is in compliance with CCDB approved construction documents. The observer shall document the date the discrepancy was resolved.
  - 7.2.6.1 The structural observer shall document the discrepancy resolutions on the day they have determined that the discrepancy(s) were resolved.
  - 7.2.6.2 The observer shall list and attach any document used to resolve a discrepancy.
- 7.2.7 The structural observer shall submit Form 802 to CCDB indicating that the required structural observation has been performed after each site observation has been completed in accordance with the approved structural observation plan. The structural observer shall seal and sign Form 802. Form 802 shall be submitted to the Building Official within 24 hours of the structural observation being completed. Form 802 is an attachment to this guideline.
- 7.2.8 CCDB will review sealed observation reports. The initial reports for geotechnical and superstructure shall remove the hold point for the foundation and framing inspection.
- 7.2.9 The structural observer shall submit the final structural observation report to CCDB at the completion of the project. The final structural observation report shall include a cover letter formatted in accordance with Appendix A and copies of all of the Form 802's that were submitted, in date order of the initial observation report.
- 7.2.10 CCDB shall review the final structural observation report.

## **8.0 RECORDS:**

All documents associated with the structural observation shall be sent to the Records Division.

**9.0 ATTACHMENTS:**

Appendix A – Final Structural Observation Cover Letter Template  
Appendix B – Structural Observation Report Form 802

**10.0 REVISION HISTORY:**

Title	Revision/Approved Date	Effective Date
TG-10-2012	DRAFT	DRAFT
TG-10-2009	September 11, 2009	October 31, 2009

**Appendix A**  
**Final Structural Observation Report Cover Letter Template**

**COMPANY LETTERHEAD  
ADDRESS, TELEPHONE & FAX #**

**CERTIFICATE OF COMPLIANCE**

CLIENT INFO

DATE

**Final Structural Observation Report**

Project Name:

Project Address:

Permit No.

Project No.

**COMPANY NAME** performed and completed the structural observation services for the **PROJECT NAME** project and finds that the work observed, per the approved structural observation plan, is in compliance with the intent of the Clark County Department of Building approved construction documents.

Only licensed engineers were utilized to perform those structural observations as required by the approved structural observation plan. Any items that were found to be in noncompliance with the approved construction documents were brought into compliance.

Attached for your review are the structural observation reports and other applicable reports.

CCDB REVIEW STAMP

REGISTERED DESIGN  
PROFFESIONALS SEAL HERE

**Appendix B**  
**Structural Observation Report Form 802**



# CLARK COUNTY BUILDING DEPARTMENT STRUCTURAL OBSERVATION REPORT



PERMIT NO: \_\_\_\_\_ ADDRESS: \_\_\_\_\_

FIRM NAME: \_\_\_\_\_ OBSERVER NAME: \_\_\_\_\_

This form was submitted to the following individuals.

Entity	Name	Entity	Name
CCDB		Owner's Representative	
Contractor		Special Inspector	

☐ **Discrepancies Observed** (Date) \_\_\_\_\_

(List discrepancies) \_\_\_\_\_

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☐ **Discrepancies Resolved** – Resolution(s) are in accordance with the approved construction documents (list resolution and date).

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☐ **Structural Observation Approved**

I hereby acknowledge that I performed the structural observations in accordance with the approved structural observation plan and TG-10. The work that has been observed complies with the intent of the approved construction documents.

Observations (describe the observations and locations; foundation, level 1, gridlines) \_\_\_\_\_

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Attachments \_\_\_\_\_

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REGISTERED DESIGN  
PROFESSIONAL SEAL HERE

# STRUCTURAL OBSERVATION REPORT PROCEDURE

**This form is available at the Clark County Department of Building web site**

- 1.0** CCDB shall enter the clearance requirement for the structural observation report into the required inspection screen for the building permit. A clearance is established as a hold point prior to a foundation inspection, for geotechnical, and framing inspection, for structural. An additional clearance is required for the final structural observation report. The final report clearance is placed prior to the building final inspection.
- 2.0** It is the contractor's responsibility to coordinate the Structural Observation visits in such a way that the person performing the structural observation is able to perform the duties outlined in the Structural Observation plan.
- 3.0** The structural observer shall perform the required structural observations in accordance with the approved structural observation plan.
  - 3.1** No concrete shall be placed or any portion of the structural system covered or loaded prior to the structural observation and resolution of any noted discrepancies.
  - 3.2** The structural observer shall document each visit on a new Form 802.
- 4.0** The structural observer shall document their observations of conforming work on the Observations line. The structural observer shall clearly identify the area or item reported, by using gridlines and elevations.
- 5.0** If the structural observer identifies work that does not conform to the intent of the approved construction documents, they shall list each discrepancy on the Discrepancies Observed line. The discrepancies shall include a location and a detailed description of the deficient condition. The observer shall state why the item is a discrepancy.
  - 5.1** The structural observer shall notify the contractor, special inspector, CCDB, and the owner of any observed discrepancies.
  - 5.2** The owner shall coordinate with the contractor and ensure that areas with unresolved discrepancies are not covered or loaded until all discrepancies are resolved.
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- 6.0** Resolve the discrepancy on the original structural observation report that identified the discrepancy. State how the condition has been resolved and that the work is in compliance with CCDB approved construction documents. The observer shall document the date the discrepancy was resolved.
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